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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte NIMER YASEEN,
CHARLIE STEVENS, and LI MO

Appeal 2009-000762
Application 09/978,432
Technology Center 2400

Decided: October 30, 2009

Before HOWARD B. BLANKENSHIP, JOHN A. JEFFERY, and STEPHEN C. SIU, *Administrative Patent Judges*.

BLANKENSHIP, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1-15, which are all the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

Invention

Appellants claim a system and a method for providing quality of service guarantees in a packet-switched network. Abstract.

Representative Claim

1. A network comprising: a first node and a second node having at least one communication channel interconnecting the nodes, the first node and the second node each having at least one ingress rate restriction for data transfers from the respective node over the at least one communication channel, and at least one egress rate restriction for data transfers to the respective node on the at least one communication channel; and a management node having communication channels with at least one of the plurality of nodes, the management node being operable to disallow at least a portion of a requested transmission from the first node to the second node when one of the ingress and egress rate restrictions of the first or second node is violated by the requested transmission.

Prior Art

Kodialam	2002/0018264 A1	Feb. 14, 2002
Dharanikota	2002/0107908 A1	Aug. 8, 2002

Examiner's Rejections

Claims 1-3, 5-10, and 13-15 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Dharanikota.

Claims 3, 4, 11, and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dharanikota and Kodialam.

Claim Groupings

Based on Appellants' arguments in the Appeal Brief, we will decide the appeal on the basis of claims 1, 9, and 13. *See* 37 C.F.R. § 41.37(c)(1)(vii).

FINDINGS OF FACT

Dharanikota

1. Differential Services (DiffServ) is an IP Quality of Service (QoS) architecture. ¶ [0008].

2. QoS is defined as a measurable level of service delivered to network users, which can be characterized as a set of metrics (e.g., packet loss probability, delay, jitter or delay variation, or available bandwidth). The QoS can be provided by network service providers in terms of a Service Level Agreement (SLA) between subscribers and providers. ¶ [0006].

3. Dharanikota describes a plurality of DiffServ-capable network elements or nodes, such as edge routers 104A-104E and transit routers 106A-106D (Fig. 1). An SLA, defining end-to-end service specifications, may include service availability and guarantees. ¶ [0028].

4. An exemplary network element 200 is depicted in Figure 2. The network element includes termination line cards (TLKs) 202A and 202B connected to real time server (RTS) boards 210 through switching fabric 204. ¶ [0031].

5. A network element 200 also includes a network processor subsystem 214, shown in additional detail in Figure 3. When configured as a receiver for packet information emanating from transmitting neighbors, the

TLK having the NP module 214 is operable as an ingress card disposed on the ingress side of the network element. A TLK having the NP module 214 may also be configured as an egress card disposed on the egress side of the network element when packet information is transmitted to the external link interface 236 to the neighboring receiver elements. ¶ [0037].

6. The TLKs interconnected via the switch fabric in a network element are capable of supporting virtual ingress/egress pipes (VIEPs) between transmitter (ingress) cards and receiver (egress) cards. A policing structure associated with the ingress cards monitors and measures incoming traffic on the incoming communications links. A buffer acceptance and flow control module is associated with each of the ingress and egress cards, operating to manage VIEP traffic flows through the switch fabric. A module associated with the egress cards schedules and shapes outgoing traffic on the outgoing communications links to the network element's neighboring nodes on the network. Traffic flow management may depend on SLA-based traffic engineering (TE) policies and priorities. ¶ [0012].

7. Dharanikota also describes (Fig. 7) "color monitors" used as a component of a DiffServ traffic conditioner for the policing functionality in a network element. Packets are distinguished based on Committed Information Rate (CIR), Committed Burst Size (CBS), and Excess Burst Size (EBS). A service may, for example, discard packets that exceed both CIR and CBS but forward all other packets. ¶¶ [0055], [0059].

PRINCIPLES OF LAW

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as

in the claim. *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458 (Fed. Cir. 1984).

ANALYSIS

Claim 9

Appellants submit that the § 102 rejection of claim 9 over Dharanikota errs because the reference discloses monitoring of network metrics at a particular node, but does not mention monitoring data flow between nodes of a network. As such, according to Appellants, the reference does not disclose disallowing at least a portion of one of an attempted data transfer from and to the first node when one of the respective ingress rate restriction and egress rate restriction would be violated by the attempted data transfer, as recited in claim 9.

Appellants' invention is a mechanism for providing QoS guarantees to subscribers accessing the network by implementing data egress and ingress rate restrictions or limits *at each node*. Spec. 4:13-19. Egress and ingress transmission qualities are monitored *on a per node basis*. *Id*. at 6:7-8.

Dharanikota describes, consistent with Appellants' invention, a mechanism for providing QoS guarantees to subscribers accessing the network by implementing data egress and ingress rate restrictions or limits *at each node*, with egress and ingress transmission qualities monitored *on a per node basis* (*see* FF 1-3, 6, 7). Confusion arises -- as does, apparently, the basis for Appellants' opinion that the reference fails to anticipate claim 9 -- from the peculiar way in which Appellants claim the invention.

Claim 9 recites that the "ingress" rate restriction limits the amount of data that may be transmitted *from* (i.e., exits) the respective node. The claim

further recites that the "egress" rate restriction limits the amount of data that may be transmitted *to* (i.e., enters) the respective node.

Dharanikota refers to "ingress" as the portion of the node that *receives* packet information from neighboring nodes. Dharanikota refers to "egress" as the portion of the node from which packet information is *transmitted to* neighboring nodes. *See* FF 5. The reference, unlike instant claim 9, uses the terms "ingress" and "egress" in a conventional way. However, that Dharanikota uses different words to describe an embodiment of claim 9 is not fatal to a finding of anticipation. For a prior art reference to anticipate in terms of 35 U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference. However, this is not an "ipsissimis verbis" test. *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990).

We disagree with Appellants that Dharanikota fails to "mention" monitoring data flow between nodes of a network. Traffic flow monitoring and management occurs in Dharanikota at, rather than between, nodes of the network, as in Appellants' invention. In Dharanikota, a node may receive (via ingress cards) packet information from neighboring nodes, the node having a policing structure that measures incoming traffic on the incoming communications links, and schedule and shape outgoing traffic (via egress cards) on the outgoing communications links to neighboring nodes on the network (FF 5, 6). The reference thus describes monitoring data flow between nodes of a network, because each node connects to other nodes on the network. That is, data flow is monitored at the egress portion of a transmitting node and at the ingress portion of a receiving node, in the terms used by Dharanikota, which is monitoring the data flow between nodes of a network.

Appellants' briefs mix arguments for claim 9 with those for claim 1, which is of different scope. Appellants' other arguments in support of claim 9, to the extent they may be considered to rely on the actual requirements that are set forth in claim 9, are not commensurate with the scope of the invention defined by that claim. Claim 9, as broadly drafted, does not require "disallowance of data flow on a communication channel between two nodes when either an egress rate restriction on one node, or an ingress rate restriction on another node, would be violated by the data flow" (App. Br. 10). Nor does the claim require "a scheme that looks at both an egress rate at one node and an ingress rate at another node in order to decide whether to allow or disallow a transmission between nodes" (Reply Br. 8-9).

We are therefore not persuaded that instant claim 9 has been rejected in error. We sustain the § 102 rejection over Dharanikota.

Claim 1

Claim 1 differs from claim 9 in requiring a "management node" to disallow transmissions from a first node to a second node when rate restrictions of the first or second node are violated.

We do not sustain the rejection of § 102 rejection of claim 1 over Dharanikota. We agree with Appellants that the Examiner has not shown a "management node" in the reference that disallows transmissions between *other* nodes when rate restrictions *on one of those other nodes* are violated. We do not find adequate support in the reference for the Examiner's apparent finding (Ans. 8-9) that each of the DiffServ-capable network nodes (e.g. edge routers 104A-104E and transit routers 106A-106D; Dharanikota

Fig. 1) are "management nodes" capable of performing the function specified by instant claim 1.

Claim 13

We do not sustain the § 102 rejection of claim 13 over Dharanikota. The Examiner does not explain why all the requirements of claim 13 might be considered to be disclosed in the indicated sections of the reference. *See* Ans. 4. When the deficiency was pointed out by Appellants, the Examiner again did not provide any reasoning in support of the rejection (*see id.* at 16). We conclude that a prima facie case of unpatentability has not been established for claim 13.

Conclusion

Claims 3, 4, 11, and 12 are rejected under 35 U.S.C. § 103 over Dharanikota and Kodialam. Appellants rely on the arguments presented in support of base claim 1 or claim 9. Kodialam, as applied, does not remedy the deficiencies in the rejection against base claim 1.

Each of claims 2 through 8 depends directly from claim 1. Each of claims 10 through 15 depends directly from claim 9. We thus sustain the § 102 rejection of claims 9, 10, 14, and 15, but do not sustain the § 102 rejection of claims 1-3, 5-8, and 13. We sustain the § 103(a) rejection of claims 11 and 12, but do not sustain the § 103(a) rejection of claims 3 and 4.

DECISION

The rejection of claims 1-3, 5-10, and 13-15 under 35 U.S.C. § 102(e) as being anticipated by Dharanikota is affirmed with respect to claims 9, 10, 14, and 15 but reversed with respect to claims 1-3, 5-8, and 13.

The rejection of claims 3, 4, 11, and 12 under 35 U.S.C. § 103(a) as being unpatentable over Dharanikota and Kodialam is affirmed with respect to claims 11 and 12 but reversed with respect to claims 3 and 4.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 41.50(f).

AFFIRMED-IN-PART

msc

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